



# Fiscal rules vs. political culture as determinants of soft budget spending behaviors

Jean-Michel Josselin, Fabio Padovano, Yvon Rocaboy

## ► To cite this version:

Jean-Michel Josselin, Fabio Padovano, Yvon Rocaboy. Fiscal rules vs. political culture as determinants of soft budget spending behaviors: Evidence from Italian and French regions. 2012. halshs-00706980

**HAL Id: halshs-00706980**

**<https://shs.hal.science/halshs-00706980>**

Submitted on 11 Jun 2012

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



*WORKING PAPER SERIES*

**JEAN-MICHEL JOSSELIN, FABIO PADOVANO AND YVON ROCABOY**

**FISCAL RULES VS. POLITICAL  
CULTURE AS DETERMINANTS OF  
SOFT BUDGET SPENDING  
BEHAVIORS.**

**EVIDENCE FROM ITALIAN AND FRENCH REGIONS**

**WORKING PAPER N° 1/2012**

# FISCAL RULES VS. POLITICAL CULTURE AS DETERMINANTS OF SOFT BUDGET SPENDING BEHAVIORS. EVIDENCE FROM ITALIAN AND FRENCH REGIONS\*

Jean-Michel JOSSELIN<sup>a</sup>, Fabio PADOVANO<sup>a,b</sup> and Yvon ROCABOY<sup>a</sup>

## Abstract

This paper analyses intergovernmental transfers in France and Italy to assess how soft budget spending behaviors may result from slacks in institutional constraints or from phenomena related to political culture, like administrative practices or implementation of rules. It innovates on the previous literature, which concentrated on single countries, by adopting a comparative perspective. We estimate two separate but identical autoregressive forecasting model on French and Italian data to evaluate the extent to which regional administrators of each country can expect to be bailed out given the fiscal rules and institutions they face. This allows to proxy the bailout expectations in both countries and their role in determining soft budget spending behaviors. A larger impact of expectations is taken as evidence of greater discretion in fiscal decisions over and beyond the formal fiscal rules in place, evincing a more lax political culture. The estimates indicate that soft budget constraints and bailing out expectations are a quantitatively important component of local government spending in both countries, regardless the different degrees of stringency of fiscal rules and the type of grants and expenditures (total, current and capital) examined.

JEL classification: H71, H73, H77, D78, P43, P48, P52

Keywords: Comparative analysis; Institutions; Expectations; Intergovernmental relations; Transfers; Local public spending; Bailing out.

<sup>a</sup> Université de Rennes I, Centre National de la Recherche Scientifique (CREM UMR 6211), France.

<sup>b</sup> DIPES-Università Roma Tre – Roma, Italy

---

(\*) Paper prepared for the IREF research project “Interactions between central and local governments and their impact on public finances: Bailing out expectations, institutions and proposal for reform”. Financial support from the IREF is very gratefully acknowledged. Presented at the Workshop on “Strategic Interactions between Governments Levels”, co-organized by the Centre Condorcet for Political Economy and the IREF and held in Rennes, December 9<sup>th</sup>, 2011. We thank all the participants to that workshop and especially Enrico Colombatto for helpful comments on a previous version of this paper. The usual *caveat* applies.

## 1. Introduction

The aim of this paper is to bring the study of soft budget spending behavior into a comparative framework of analysis. Interpreted in an intergovernmental principal-agent setting, soft budget spending behavior is the result of a dynamic commitment problem, caused by the lack of a commitment technology of the central government (the principal) that allows the local governments (the agents) to spend more than their current available resources because they can rationally expect that, in the future, the central government will bail them out (Kornai et al., 2003; Prudhomme, 1995; Qian and Weingast, 1997). The empirical literature on the issue has so far tested the implications of the dynamic commitment problem - chiefly the binding force of the fiscal rules that discipline the relationships between different government tiers and the determinants of bailout expectations - by means of a variety of empirical strategies and in different samples (Padovano, 2012; Bordignon and Turati, 2009; Petterson-Lidblom, 2010; Rodden et al. 2003). The common feature to all these studies is the focus on a single institutional setting, i.e., they perform time series analyses on samples drawn from a single country. This approach, on the one hand, has the obvious advantage of applying a *ceteris paribus* conditions to the existing institutions, which allows evaluating the credibility of their commitment potential and, by *converso*, the sources of bailing out expectations. Yet, focusing on just one country, on the other hand, makes it impossible to analyzing several issues that have never been examined so far in the literature, such as:

- a) Comparing the binding force of alternative sets of fiscal rules that discipline intergovernmental relations, to assess which is better able to solve the dynamic commitment problem;
- b) Comparing the contribution of bailout expectations to the determination of soft budget spending behavior in alternative institutional frameworks;

- c) Soft budget spending behavior has often been shown to be affected by informal practices of public administration, political exchanges and personal contacts (Padovano, 2011, 2012; Kornai et al., 2003; Rodden *et al.* 2003) that can be comprised under the label “political culture” (in the sense of Putnam, 1993). To the extent that it plays a complementary (if not a substituting) role in the process of distribution of grants, it is interesting to compare how relevant are these practices in different institutional contexts and countries.
- d) More broadly, the adoption of a comparative analysis to the problem of soft budget spending behavior allows to verify the generality of the conclusions reached so far by the models estimated on single country samples.

In this paper, we innovate on the literature by providing the first comparative analysis of the role played by alternative fiscal rules and political cultures in solving, or in exacerbating, the dynamic commitment problem that generates soft budget spending behaviors in lower tiered governments. To minimize the loss of explanatory advantages related with the *ceteris paribus* conditions that single country studies engender, we consider two democracies of similar cultural and economic development, Italy and France. Within them, we examine the same intergovernmental relation liable to generate soft budget spending behaviors, viz., the distribution of transfers from the central government to the regions. In both countries regions constitute the government level immediately below the central one: this ensures that grant distribution is both direct and not dispersed in a myriad of government units, as regions count to 20 in Italy and 22 in France. As we shall see in greater detail later on, grant distribution in the two countries differs with respect to one main institutional feature: in France, fiscal rules are designed to ensure that the distribution be horizontal, i.e., such that variations in the amount of transfers to one region are matched by proportional variations in funds transferred to all other regions (the *envelope* principle). In Italy, on the

other hand, grant distribution is much more redistributive, as fiscal rules themselves foresee the possibility of asymmetries in the (per capita) amounts transferred to each region. The very same distinction among special and ordinary statute regions and the presence of re-equilibrating funds aimed at redressing the development gaps between the Centre-North regions and those of the *Mezzogiorno* are examples of the asymmetric nature of grant distribution in Italy.

The political culture of the two countries is likely to be another major source of variation in the way transfers are distributed and bailout expectations are generated. Using a certain amount of approximation, that we will later contain, Italy and France have relatively contrasted civic and political traditions that influence the working of the institutions of decentralization. France, on the one hand, has quite elaborated rules of control, following its tradition of strong central power which remains vivid even after three decades of significant decentralization (Guengant and Rocaboy, 2008). With a stable political system, the country is not a natural candidate to soft budget spending behaviors by lower tiers of government. French politics and public administration are mostly characterized by a culture of explicit rules and of abidance to them. Conversely, political determinants in Italy may play a more significant role by enabling strategic behaviors of lower tiers of governments. In the Italian case, the culture of conventions (in the Humean sense) might induce a sense of “relaxed” behavior with regard to the rules governing public affairs. All in all, common sense would infer that Italy lives with civic traditions that make its regions natural candidates for soft budget constraints (Putnam, 1993).

The empirical strategy that we adopt in this paper serves two purposes. The first is disentangling the role played by fiscal rules and political culture in soft budget spending behavior. The second is comparing evidence from each country related to each of these two dimensions. To perform the first task, we first estimate a funding equation, where the amount

of per capita transfers, in each country, are a function only of the variables that the formulas that each country adopts. Thus, the first round of estimates captures the role played by fiscal rules in the allocation of grants to regions. We then augment this equation by a series of proxies for bailout expectations, drawn from the political economy/public choice literature on the distribution of transfers (Padovano, 2011; Kornai et al. 2003). These proxies are related with political determinants and administrative practices that have been found to be empirically relevant in the actual distribution of grants to lower tiered governments. The explanatory power of these covariates approximates the role played by “political culture” in the distribution of grants. The comparison of the explanatory power of the fiscal rules and the political culture variables assesses the role played by these two factors in the distribution of grants in France and Italy. Then, in order to evaluate the impact of both set of factors on soft budget spending behavior, we estimate an autoregressive empirical model, which is the standard estimating procedure in the analysis of bailout expectations (Rodden, 2005; Bordignon and Turati, 2009; Padovano, 2011). Specifically, we interpret the fitted values of the most encompassing model, i.e., the one that includes the covariates related to both the fiscal rules and the political culture, as the rational expectations at time  $t$  that regional government formulate about the transfers they are going to receive at time  $t+1$ . This interpretation is legitimate insofar the fitted values include all the relevant information about the process that generates the distribution of grants available at time  $t$ : to ensure that, special attention will be given to consideration of an as wide as possible set of explanatory variables in the right-hand side of the funding equation. To assess the role of these bailout expectations on regional spending, i.e., to evaluate and compare the dimension of soft budget spending behavior, we introduce the fitted values into an equation that estimates regional spending. To the extent that transfer expectations generated at time  $t-1$  affect spending at time  $t$  (and not  $t-1$ ) we obtain an estimate of the role played by bailout expectations on total regional

expenditures; in other words, we have an assessment of the extent of soft budget spending behavior, soft because it is not constrained by fiscal rules. Naturally, to compare the relevance of these phenomena in Italy and France, we apply a similar empirical strategy to the data from both countries. Specifically, two data sets are used for panel data analysis: the one for Italy comprises 19 regions and 2 autonomous provinces studied between 1996 and 2007; for France, 22 regions are considered over the period 1995-2006. The use of basically the same estimating equation for both countries facilitate a comparative interpretation of the estimated coefficients. The panel structure of the datasets allows controlling also for changes occurring within a country through time.

To anticipate the results of the estimates, in both countries channels of soft budget constraints are indeed present. Transfers are in part related to political motives and they create expectations of future transfers, spending behaviors being thus positively affected. In France, political expediencies do not appear to produce significant differences in transfer decisions across regions, yet soft budget spending behaviors are still detected in all regions taken together. In Italy, institutions and political phenomena concur in determining differential treatments in central government's transfer decisions and in regional government bailout expectations. These result are consistent with the basic philosophy of the fiscal rules of the two countries. As far as the role of political culture is concerned, the estimates show that soft budget spending behavior is not, however, quantitatively more significant in Italy than in France. Wherever a slack in the binding force of fiscal rules creates an opportunity for discretionary, vote maximizing decisions, politicians exploit it.

The rest of the paper is organized as follows. Section 2 provides a literature review, mostly focusing on recent tests of soft budget spending behavior. Section 3 provides a first comparative analysis of the two systems of decentralization of public finance, with special emphasis on the procedures that discipline the distribution of grants to regions in both



countries, Section 4 describes the empirical strategy. Section 5 presents the estimates, followed by concluding comments and discussion in Section 6.

## *2. Transfer expectations and spending behavior of lower tiers of government*

The theoretical literature on soft budget constraint originates from the analysis of the behavior of state firms in planned economies (Kornai, 1986; Qian and Roland, 1998). When such firms found themselves in financial difficulties, the planning authorities tended to rescue them. After playing this game a number of periods, bailout procedures can be anticipated and integrated in the strategic behavior of the firms. The ensuing disincentives bring about technical and allocative inefficiencies most detrimental to the economy as a whole. Similar mechanisms are also encountered in the banking (Dewatripont and Maskin, 1995) and in other productive sectors of market economies (Kornai et al. 2003).

The second step in the development of soft budget spending theory emerges in the framework of multilevel governments, with the “second generation theories” of fiscal federalism (Oates, 2005). A first class of models analyzes soft budget spending behavior in a game theoretic static fashion (Wildasin, 1997; Goodspeed, 2002; Petterson-Lidblom, 2010). The intuition is that in an agency setting the delegation process (here, decentralization) is likely to yield asymmetries of information about the type of central government that the local one is facing. In the jargon of these models, the central government can either be a “tough” one, who will not bailout local ones in deficit, or a “weak” one who, instead, will. A set of circumstances, such as ideological similarity of government majorities, the amount of negative externalities engendered by the financial difficulties of the local government, or even plain corruption determine the probability that the local government attaches to the fact that the central one is in fact weak; the larger this probability, the higher the expectations that a

bailout will occur. Goodspeed (2002) for instance examines vote maximization as a source of soft budget spending behavior. In his model a vote maximizing central government may bailout a local government that has borrowed too much when the loss of votes from national taxpayers, who have to bear the fiscal cost of the bailout, is lower than the gain of votes from the bailed-out local taxpayers. If this is the case, the local government anticipates the bailout and overspends. Wildasin (1997), on the other hand, shows that local or regional governments of a certain size or economic weight generate positive externalities beyond their administrative boundaries. If they were to become insolvent, those externalities would fade away, endangering regional growth. Bailing out the regions that are “too big to fail” leads to strategic negligence or even insolvency, which again shifts the burden of fiscal discipline onto the national taxpayers.

The analysis of the strategic relationships between central and local governments leads to the conclusion that bailouts can take a variety of forms (Rodden, 2005; Bordignon and Turati, 2009, Padovano, 2011). The central government may refuse to bail out, or do so with delay, and/or be selective of which local governments relieve from trouble and which abandon to self-financing through a fiscal crunch. Forms of “implicit bailouts” are also possible, when the central government’s inability to commit is so severe that it immediately surrenders to the profligacy of the local government and sets a high level of transfers ex ante. Examples of implicit bailing outs are incremental rules that entitle local governments to an ever-increasing level of transfers with respect to the previous years’ levels of spending (Kornai et al. 2003). Research is then de-linking bailouts from the occurrence of a deficit, as a central government can be generous towards a politically friendly local authority that has accumulated a small deficit and, at the same time, be stingy with an unfriendly one in great financial distress.

Another consideration that emerged in the literature is that the mechanisms of cooperation and competition amongst levels of government that lead to soft budget spending behaviors are highly sensitive to the institutional context in place (Breuillé, Madies and Taugourdeau, 2006). The institutional context is indeed crucial in that it enables (or not) agents (lower levels of governments) to develop strategic behaviors at the expense of their principal (the higher level of government). This is why the empirical literature on soft budget constraint has mostly developed on a case-study basis in the wake of Rodden et al. (2003). The challenge for empirical analysis is first to determine a relevant set of determinants and proxies for expectations, as exemplified by Bordignon and Turati (2009) who consider health care expenditures of Italian regions; secondly, to evaluate how these transfer expectations impact on local governments' spending behaviors. The identification of proxies for bailout expectations has, however, shown that the institutions and fiscal rules in place can explain only a part of the process through which local governments formulate their bailout expectations. An important role is played by political phenomena, such as rent-seeking, political calculations, practices of public administration, that we hereby include in the notion of "political culture" (Rodden, 2005; Bordignon and Turati, 2009; Padovano, 2012).

All these findings emerged in single country analyses. It is time to examine these issues in a comparative setting. In order to do so, it is important to describe the institutions that characterize the relationships between the central and the regional governments in the two countries that we have chosen for this comparative analysis, namely Italy and France.

### *3. Regional governments in Italy and France: Comparative institutional analysis*

3.1. The basic institutional framework. Both Italy and France feature a 4-tiered vertical organization of government (including the central government level). From the bottom to the

top, France<sup>2</sup> has the *Communes* (numbering 36,565), the *Départements* (numbering 100) and 22 *Régions*. Italy has the *Comuni* (currently 8109), the *Province* (109) and 20 *Regioni*. This multilevel government system administers two countries that are similar in terms of population (about 60 millions in each country) and less so in terms of size (France has a surface of 544,000 square kilometers against 301,000 of Italy).

In both countries the regions are the upper tier of government and the most recently established one. The French regions were created in 1956 after considering that the small size of the *Départements* could represent a problem for the modernization of the country. Originally responsible for planning the development and growth of the country, for a long while their only goal was to compile statistics on the functioning of the local economy. The regions were administered by prefects under the direct responsibility of the central government. The decentralization laws of 1982 changed this situation by providing the regions with a statute of local authorities similar to that of the *Communes*. The first regional elections were held in 1986. From that time, the regional councils (*Conseils régionaux*) have been elected by direct universal suffrage, the elections taking place every six years.

In Italy, on the other hand, the Regions were foreseen for the first time in the Republican Constitution of 1948 but were actually established in two separate periods of time. First, the time interval between 1948 and 1962 witnessed the creation of the 5 regions with an autonomous statute (*Regioni a Statuto Speciale* or RSS: Valle d'Aosta, Trentino Alto Adige and Friuli Venezia Giulia in the North; Sicily and Sardinia in the South), motivated by their geographical, cultural, and economic differences with respect of the rest of the country. Then, in 1970, the remaining 15 regions were established with basically identical statutes (*Regioni a Statuto Ordinario*, or RSOs). Much in the same way as in France, the *Consiglio Regionale*

---

<sup>2</sup> Throughout the paper, we refer to France as continental France, excluding the TOM (*Territoires d'Outre-Mer*), namely, the territories outside Europe that constitute the remains of France colonial empire.

and the President (commonly called the “Governor”) are directly elected every 5 years via an institutional mechanism that ensures stable majorities (Padovano and Ricciuti, 2008).

Over the years, the French decentralization process has been transferring new responsibilities to the regions (Guengant and Rocaboy, 2008; Garelo, 2003). Today, vocational training, high school buildings and facilities and railway infrastructure are the main responsibilities assigned to the French regions, as shown in Table 1. In some cases, e.g., the organization of regional railways, the handing over of these responsibilities has not taken place at the same time for all regions, but the rule of simultaneity has otherwise been generally respected. The way the transfer is financed rests upon the simple principle that every additional expenditure induced by a prerogative transferred to the regions is to be exactly compensated by the central government. Compensation takes two forms. First, there is a transfer of taxes. For example, the tax on the sale of motor-driven vehicles, formerly levied at the central level, was assigned to the regions in 1984. Second, all subcentral jurisdictions (regions included) receive a lump-sum grant, the DGD (*Dotation Globale de Décentralisation*), which is equal to the difference between the expenditure attributable to the new prerogative and the value of the taxes ceded. In 2004, the DGD amounted to more than 20% of the total revenue of the regions. The DGD was first adjusted annually at the rate of the VAT and now at a rate equal to the sum of the inflation rate and a fraction of the rate of growth of the previous year GDP in volume (Gilbert and Rocaboy, 1996, Guengant and Josselin, 2005). Setting this fraction is the responsibility of the national assembly, and constitutes the lever by which the central government varies the yearly amount of transfers to the regions. Since most of the members of the Assembly are also local representatives, there is a strategic dimension in the assessment of this fraction: by fixing a high DGD indexation rate, the MPs offer the local governments the possibility to increase their expenditures and/or to alleviate the tax burden on the local taxpayers. The evolution of total current transfers, with

the indication of the most important reforms introduced by the central government, is depicted in figure 1, limited to three representative regions (not to clutter the image). The procedures that govern the assignment of the DGD show that changes of the fraction of the DGD are “horizontal”, i.e., they apply to all regions more or less in the same way. As such, the DGD follows one of the fundamental principles of the architecture of the French state, namely horizontal symmetry: even in the domain of fiscal relationships, all governments tend to be treated in the same way. In broad terms and at least on paper, the French government does not follow the practice of systematic differential treatment of local governments (or “variable geometry federalism”) that is instead followed in neighboring Spain and Belgium and, indeed, Italy.

[Table 1 and Figure 1 about here]

In Italy, the most important “horizontal” institutional difference is between the RSO and the RSS. The RSSs have broader competencies and spending powers than the RSOs and enjoy a correspondingly larger tax autonomy, especially in the form of larger shares of central government taxes. To (partly) compensate that, the RSSs receive less funds from the central government in the form of explicit transfers (Brosio and Piperno, 2007). On the other hand, both RSOs and RSSs have broadly similar competencies: the main one is health care: as table 2 shows, regions spend about one half of their revenues on health care, slightly more the RSOs, less the RSS. The remaining outlays are composed by a miscellanea of administration, local transportation, social assistance, education and culture programs (ISSIRFA, 2008). The funding of the Italian national health service (SSN, *Servizio Sanitario Nazionale*) follows a two stage process. First, with the approval of the budget law for the following year, the central government sets the overall size of the National Health Fund (FSN, *Fondo Sanitario Nazionale*). As the SSN is also financed by the IRAP (*Imposta Regionale sulle Attività Produttive*, a regional value added tax computed at the firm level), by approving the budget

the central government effectively sets the amount of “topping up” to be given to the regions via conditional grants for the following year’s health expenditures. Later in the year, however, additional transfers are distributed to the regions, according to a predetermined formula, that basically equalizes per capita health financing (regional taxes plus central government transfers) across regions, with some adjustments being made for the age structure of the population and the interregional mobility of patients (Turati, 2003). In principle, given that both the formula and the overall central government funding are predetermined, the allocation of the national funds to each region should result automatically. In practice, however, there is often considerable bargaining between the regions and the central government about the amounts of funds to be distributed to each region, partly because some room in “interpreting” the formula is allowed (and the formula itself, parameters included, has often been changed); partly because the regions perform a substantial amount of “budget dressing”; and partly because of the difficulty in computing from the centre a precise estimate of “standardized” or “efficient” health cost for the amount of services provided by each region (Bordignon and Turati, 2009). The remaining regional expenditure programs follow a similar process especially for the combination of regional self-financing via taxes and central government grants provided via the budget law; the greater differences lay in the equalization procedures that leave even more room for discretionary choices. Moreover, as already said, the RSSs can retain more funds in the form of participation to central government taxes, and receive less in the form of explicit grants-in-aid. This strong resilience of discretionary power *vis à vis* rule based decisions confirms the differential importance of “political culture” in France and Italy and the need of examining the issue of the distribution of transfers from a positive outlook.

#### *4. Empirical strategy*

The empirical strategy consists in two nested batteries of tests. The initial step deals with transfers from central government to regional governments, in order to have an estimate as precise as possible of the structural process that determines their distribution. According to the rational expectation theory, the fitted values of these transfers equations serve as a *proxy* for the expectations that regions form about the transfers they can receive from the central government (section 4.1). The second step estimates an expenditure equation of regional governments, to verify whether bailout expectations have behavioral consequences, i.e., if they have a distinct impact on the level of regional spending (section 4.2). Both these tests are “nested”, in the sense that they both consists of the estimate first of a benchmark and then of an augmented equation for both transfers and expenditures. The benchmark funding equation includes only the variables foreseen by the formulas for equalization transfers of Italy and France (Brosio et al. 2007, for Italy; Guengant and Rocaboy, 2008, for France). These are indicators of the state of the regional economy and the size of the population and capture the role played by fiscal rules in the allocation of grants to regions. The benchmark specifications are then augmented for time specific and region specific proxies of bailout expectations, as suggested by the literature (Padovano, 2012). As we shall see in greater detail in the next section, these proxies are related to administrative practices, political deals and circumstances that can all affect the distribution of transfers, and are thus more related with the country’s “political culture”. In a similar fashion for the spending equations, we first estimate a structural model of regional expenditures, then augment it with the fitted values of the funding equations, i.e., the estimate of bailout expectations. A positive and statistically significant coefficient on this term is evidence of a positive impact of bailout expectations and of the “political culture” on the regions’ spending behaviors. This empirical strategy is based on an autoregressive forecasting procedure, commonly used in the literature, as in the case of Holtz-Eakin and Rosen (1993), Rattsø (1999) and Rodden (2005). With respect to this literature,



however, and particularly Rodden (2005) and Bordignon and Turati (2009), we mark an improvement in that we consider a quite large set of proxies for bailout expectations. The point is especially important because if such a set is incomplete or mis-specified, the estimation of the impact of these expectations on the spending decisions of local governments yields incorrect empirical estimates.

4.1. Transfers and transfer expectations. The benchmark equation explaining transfers per capita  $T_{i,t}$  from central government to regional governments  $i$  at times  $t$  over horizon  $T$  is specified using variables included in the grant distribution formulas of the two countries (variables can be lagged in the estimations, see section 5):

$$(1) \quad T_{i,t} = \alpha_1 POP_{i,t} + \alpha_2 U_{i,t} + \alpha_3 \Delta GDP_{i,t} + \sum_{i=1}^I q_i + \varepsilon_{1,it}$$

In this equation, the regional unemployment rate is denoted  $U_{i,t}$  while regional population  $POP_{i,t}$  is to account for scale effects. The variable  $\Delta GDP_{i,t}$  expresses the per capita difference between the regional and national GDPs. Finally,  $q_i$  stands for regional fixed effects<sup>3</sup>. The model is tested for total transfers  $TT_{i,t}$ , current expenditure transfers  $CT_{i,t}$  and investment expenditure transfers  $IT_{i,t}$ .

In a second step we introduce further explanatory factors, namely the proxies for bailout expectations. Following Bordignon and Turati (2009) and Padovano (2011), two categories of such proxies are considered: first, a vector of time-varying proxies that are meant to affect each region without distinction. The previous equation (1) is augmented with the following variables. The ratio between the consolidated national deficit of central government and the average one of the remaining countries of the EU15 is denoted  $NDEF_t$ ; it

---

<sup>3</sup> While it is utterly impossible to translate all provisions foreseen by the French and Italian laws for the distribution of grants to regional governments into a regression model, equation (1) does include the factors to which the fiscal rules that those laws implement make reference to. Furthermore, as the fixed effects account for the other conditioning phenomena, the coefficients  $\alpha_1$  to  $\alpha_3$  can be interpreted as capturing the role played by the phenomena indicated by the fiscal rules in the allocation of grants.

may express the degree of tightness of the national budget. A linear trend ( $TREND_t$ ) is introduced to capture the incremental path of transfers (like the so-called “*spesa storica*” rule that characterized the distribution of current transfers in Italy for most of the time interval under consideration). The variable  $NHIND_t$  represents the Herfindahl index of the parliamentary seats of the national government majority. A higher fragmentation of the ruling majority would require more leniencies of the central government *vis-à-vis* regional governments in order to buy their support. Finally, the national political budget cycle can be captured by the dummy  $NPBC_t$ , which takes a value of 1 in  $t$  when a national election takes place at the second semester of year  $t$ ; value 1 in  $t$  and  $(t - 1)$  when a national election takes place at the first semester of year  $t$ ; and a value 0 otherwise. Governmental room for maneuver is captured by  $NMARGIN_t$ , the difference in the number of seats between the first and second largest party in the national parliament. Greater room of To summarize, equation (1) augmented with time-varying proxies becomes:

$$(2) \quad T_{i,t} = \alpha_1 POP_{i,t} + \alpha_2 U_{i,t} + \alpha_3 \Delta GDP_{i,t} + \alpha_4 NDEF_t + \alpha_5 TREND_t + \alpha_6 NHIND_t + \alpha_7 NPBC_t + \alpha_8 NMARGIN_t + \sum_{i=1}^I \rho_i + \varepsilon_{2,it}$$

Equation (2) is tested for total, current expenditure and investment expenditure transfers, to verify whether the same process affects all types of transfers (and expenditures) in a similar fashion.

A second vector of proxies is considered to capture region-specific characteristics. Dummy variable  $RPBC_{i,t}$  expresses the regional political budget cycle and it is constructed in the same way as its national counterpart. Another dummy is  $ALIGN_{i,t}$ , expressing the political concurrence of the regional and of the national majorities. It takes the value 1 when the Regional and National legislative branches are from the same political ideology, 0 otherwise. Finally, the vote margin in the regional assembly is defined by  $RMARGE_{i,t}$  and  $GOVYEARS_{i,t}$

expresses the lobbying power of a regional government that would remain in power long enough to build networks of relations and allegiance. Equation (3) provides the complete set of determinants of transfers, including proxies for expectations of toughness on the part of the central government:

$$(3) \quad T_{i,t} = \alpha_1 POP_{i,t} + \alpha_2 U_{i,t} + \alpha_3 \Delta GDP_{i,t} \\ + \alpha_4 NDEF_t + \alpha_5 TREND_t + \alpha_6 NHIND_t + \alpha_7 NPBC_t + \alpha_8 NMARGIN_t + \alpha_9 RPBC_{i,t} \\ + \alpha_{10} ALIGN_{i,t} + \alpha_{11} RMARGE_{i,t} + \alpha_{12} GOVYEARS_{i,t} + \sum_{i=1}^T \theta_i + \varepsilon_{3,i,t}$$

Similarly to what has been previously described, equation (3) is tested for total, current expenditure and investment expenditure transfers.

4.2. Effects of transfer expectations on expenditures. Regional expenditures are then considered in the two-stage analysis illustrated above, where they are first examined with respect to standard structural determinants of spending behaviors and then with the incorporation of transfer expectations in the expenditure equations. This specification allows to check whether those expectations have an influence on the spending behavior of regions. Furthermore, since we compare regions in two countries of different political cultures, we would like to infirm or confirm the hypothesis that the strategic behavior of regional governments regarding bailout is context-dependent, namely that political culture does (or does not) affect soft budget behavior.

The first stage thus explains per capita expenditures  $E_{i,t}$  of regional governments  $i$  at times  $t$  over horizon  $T$  using structural variables and context-dependent variables. The latter originate in the different tasks assigned to regional governments in Italy and in France. For instance, since health expenditures are the most important competence of Italian regions, but are hardly present in the French ones, specific variables are introduced to capture this institutional characteristic. The following spending equation only details structural variables

common to both countries while context-dependent variables will be separately described afterwards.

$$(4) \quad E_{i,t} = \alpha_1 RGDP_{i,t} + \alpha_2 YPOP_{i,t} + \alpha_3 EPOP_{i,t} + \alpha_4 RIGHT_{i,t} + \alpha_5 SPEC_{i,t} + \sum_{i=1}^I q_i + \varepsilon_{4,it}$$

In this equation, the regional GDP per capita  $RGDP_{i,t}$  conveys the income effect of Wagner's law, that predicts a positive correlation between public expenditures and per capita income. A demand effect can be expressed through the proportion of young  $YPOP_{i,t}$  and elderly  $EPOP_{i,t}$  people in the population of the region. A partisan effect is captured with the dummy  $RIGHT_{i,t}$ , which should capture the conjecture that rightwing regional governments would be less inclined to spending than their leftwing counterparts. Supply or demand-inducing effects are context-specific and as such they will be detailed in the estimation section. Until then, they are synthesized by the vector of variables  $SPEC_{i,t}$ . Fixed effects are denoted as previously. As for transfers, equation (4) is tested for total, current and investment expenditures.

We now move on to the second and final stage of estimations. The fitted values  $\hat{T}_{i,t-1}$  from equation (3) are introduced in the expenditure equation (4), according to the autoregressive forecasting procedure. The explained components of transfers are meant to represent the expected financing of regions by the central government, depending on its expected toughness (i.e., as it is expressed through the bailout proxies), according to rational expectations theory. Expenditures with expectations about transfers can thus be described as:

$$(5) \quad E_{i,t} = \alpha_1 RGDP_{i,t} + \alpha_2 YPOP_{i,t} + \alpha_3 EPOP_{i,t} + \alpha_4 RIGHT_{i,t} + \alpha_5 SPEC_{i,t} + \alpha_6 \hat{T}_{i,t-1} + \sum_{i=1}^I q_i + \varepsilon_{5,it}$$

Again and finally, equation (5) is tested for total, current and investment expenditures.

We now propose to apply the successive steps of this empirical strategy to the two samples of Italian and French regions.

## 5. Estimations

Estimations follow the track of the testing strategy described above. Section 5.1 explores the structural and conjectural determinants of transfers. The former rests on the standard components of grants formulas for France and Italy, while the latter involves proxies for bailout expectations. In particular, the most important indicators in the French formula for assigning grants are population size and regional growth differentials; on the other hand, in Italy the unemployment level is the most relevant proxy of the state of the regional economy. Section 5.2 then investigates how expected transfers affect spending behaviors. The objective is to confirm or infirm the existence of different attitudes from one country to the other. Since the Italian and French regional governments make their decisions within different institutional settings and contrasted frameworks of political culture, one may wonder whether that affects their patterns of expenditure, in particular with respect to soft budget behaviors.

5.1. Estimating transfer and bailout expectations. Let us recall that we first have to explain transfers per capita  $T_{i,t}$  from central government to regional government  $i$  at times  $t = 1, \dots, T$ . The standard grant formula for transfers is described by the previous equation (1). Estimations respectively correspond to total, current and investment expenditures transfers. Table 4 provides the results for the Italian and French cases successively.

The fundamental evidence that emerges from comparing the estimates of equation (19) for Italy and France is that the institutional variables, i.e., those included in the formulas, only partly condition the central governments' decisions to allocate transfers across regions. Their

relevance appears greater in the case of France than in that of Italy, as the values of the adjusted  $R^2$  and the sizes of the coefficients suggest. Furthermore, the cross-countries variations in the estimated coefficients are consistent with the different economic state variables that the Italian and French legislations for grant distribution emphasize, which reinforces the plausibility of the estimates. In the Italian case unemployment plays a more relevant role than relative growth of GDP, while the opposite is true for France. Again in line with the broad characteristics of the standing legislation, both in the French and in the Italian case unemployment correlates significant only with current transfers, not with those earmarked for capital projects, which in fact follow different mechanisms of distribution (Arachi and Zanardi, 2004; Guengant and Rocaboy, 2008). In both countries more dynamic regions, characterized either by a lower unemployment or by a higher relative growth rate, seem better able to attract more funds for investments in public capital, in a sort of nonconvex growth process (Padovano, 2007). Finally, regional fixed effects  $\alpha_i$  are confirmed.

[Table 4 about here]

We then augment equation (1) with proxies for bailout expectations, beginning with time-varying proxies. Results of equation (2) for France and Italy are presented in table 5. The results for both countries indicate that time-related proxies do carry a significant explanatory power, for both countries, and are generally in line with theory. Economic state variables that are included in the fiscal rules governing the distribution of grants to regions maintain the expected signs, but in many cases loose explanatory power once these new variables are added<sup>4</sup>. This result further confirms the role of expectations and of political culture in the distribution of grants. There thus remains to check the relevance of the individual time

---

<sup>4</sup> In general the unemployment rate still positively correlates with current grants in Italy and the relative regional growth rate of output is negatively correlated in the case of France. The loss of statistical significance is concentrated in the case of capital transfers, which, as already mentioned, also at the level of legislation follow a different distribution pattern, and then reverberate onto total transfers.

proxies. First, the linear trend  $TREND_t$  is significant in both countries except for investment transfers (with just 10% significance in France). That confirms an incremental path for current transfers and a greater variability of investment support, depending on the dynamism, the duration and the time partitioning of regional investment projects. On the national side of public budgets, the ratio  $NDEF_t$  between the consolidated national deficit of central governments and the average EU15 deficit – effectively, a measure how expansionary the fiscal policy is - is introduced with current and lagged dates. In Italy, the results are in line with theory, as a greater deficit-to-GDP ratio with respect to the European average results in larger transfers to the regions, which constitute a central government outlay. In France, the instantaneous impact of the tightness of the national budget on total transfers is significantly negative but then becomes positive as expected for the lagged value, which includes the one year lag in appropriations in the central government budget. The net effect, measured by the sum of the two coefficients, is positive, as theory predicts.  $NHIND_t$  is the Herfindahl index of the parliamentary seats of the national government majority. Results for both countries confirm the strongly positive influence of majority fragmentation, i.e., of weaker national governments needful to acquire local political support at the national level by means of transfers, with a slight qualification for the French case where investment transfers are less susceptible to leniency on the part of the ruling majority. As to the national political budget cycle  $NPBC_t$ , it does prove to be significant. Finally, for Italy, the variable  $NMARGIN_t$ , an alternative measure of central government strength related to the difference in the number of seats between the first and second largest party in the national parliament, appears to be quite significant for all categories of transfers. The same variable never turned out significant in the estimates for France, probably reflecting the semi-presidential nature of the French government and the greater stability it lends to the executive branch. Regional fixed effects  $\alpha_i$  are still confirmed.

[Table 5 about here]

Finally, in equation 3 we introduce region-specific proxies in the grant equation (which is already augmented with time-varying proxies). This is an important test for the soundness of our empirical analysis, because, as already mentioned in section 3, we expect that the distribution of grants to regions follow a basically horizontal pattern in France, while it should be more consistent with a “variable-geometry” model in the Italian case. Such differences should emerge precisely when region-specific proxies are considered in the explanatory model. This is exactly what we found, as in our estimates France and Italy differ in that region-specific proxies of expectations play a more important role in the Italian than in the French case. This result reflects the different setups of intergovernmental financial institutions of the two countries, more informed to principles of horizontal symmetry in France than in Italy.

[Table 6 about here]

Table 6 provides the estimations of equation (3). The presence of a regional electoral year  $RPEC_{i,t}$  is never significant in the Italian case. There is no evidence of a regional political budget cycle, possibly because regional and national elections are often held in the same year (Padovano, 2012). In France, on the contrary, where regional and national elections are held at different time intervals, there is indeed evidence of such a cycle for current transfers (model 16) and that resources are drawn from funds to capital transfers, as the negative sign on the  $RPEC_{i,t}$  variable in model 19 suggests. The combination of these two signs is perfectly consistent with the theory of the composition cycles *à la* Rogoff (1990). The dummy variable  $ALIGN_{i,t}$  indicates that national and regional governments are supported by the same majority. The alignment effect, though popular in the theoretical literature (Arulampalan et al., 2009, is a recent example), is not confirmed in either case. Another proxy



is the vote margin in the regional assembly  $RMARGIN_{i,t}$ . Significant for total transfers in both cases (though the augmented model 19 does not confirm it), it is also relevant for current transfers in Italy but not in France, and vice versa for investment transfers. No straightforward explanation emerges and it would probably require more investigation into the underlying decision processes. Finally,  $GOVYEARS_{i,t}$  representing the number of years in office at time  $t$  of the President of the regional government, is a variable that was meant to be tested as context-specific in the case of Italy. A proxy for lobbying efficiency in the spirit of Olson's (1982) theories on lobbies' penetration, it does show the expected positive sign, especially for total and current transfers. On the contrary, it has never reached a near-borderline level of significance in France, showing either that lobbying for more transfers by regional politicians in France is not effective, or that it produces an across-the board impact in the form of more transfers to *all* regions, replicating the horizontal structure of French grant distribution. The variable  $RAIL_{i,t}$ , on the contrary, is included in the augmented model 19 for France only. It intends to capture the railway investments that were implemented by regional governments with the support of the central government beginning with the year 1996. The strongly significant coefficient for this variable confirms that our estimates indeed capture policy changes in the distribution of grants.

All in all, a comparative pattern seems to emerge, that in both countries institutional variables, included in formulas, only partly condition the central government's decisions to allocate transfers across regions. Political determinants carry a quite important explanatory power in both countries. France and Italy differ in that region-specific proxies of expectations play a more important role in the Italian than in the French case. This result reflects the different setups of intergovernmental financial institutions of the two countries, possibly more informed to principles of horizontal symmetry in France than in Italy.

5.2. Bailout expectations and spending behavior. We first test regional spending behavior without any reference to possible bailout expectations. The objective is thus to test equation (4) whose results are presented in table 7. As was earlier mentioned, regional per capita expenditures  $E_{i,t}$  depend on structural factors that can be “universal” or context-dependent. In the first category, regional GDP per capita  $RGDP_{i,t}$  appears to be significant in both countries, with the same exception for capital expenditures (probably because the estimating model relies on yearly frequency data, while the relationship between this type of expenditures and income per capita may follow a different time dynamics). Overall, this result is consistent with Wagner’s law explanation of government growth. We then try to assess expenditures relating to age-specific needs with the proportion of young  $YPOP_{i,t}$  and elderly  $EPOP_{i,t}$  people in the population of the region. Although these two variables are common to the two samples, available data impose that  $YPOP_{i,t}$  is the population below 16 in Italy and below 20 in France. Similarly,  $EPOP_{i,t}$  describes the population above 65 in Italy while it is above 60 in France. As expected, we find inverse results from one country to the other, that reflect the quite different prerogatives of regions in Italy and France: French regions have education as one of their main concerns, while Italian regions have health in charge and elderly people significantly weigh on the corresponding budgets. Moving to the conjecture of a partisan effect  $RIGHT_{i,t}$ , we find that neither country seems to be affected by a more lavish spending behavior from leftwing governments, except for current expenditures in France. We finally consider country-specific variables, beginning with Italy and the number of top bureaucrats in regional public administration, a data that was not available for France. Although it is significant only at the 10% level, because the data change in jumps of 10 years, the variable shows the expected positive sign that the Niskanen theory of bureaucracy posits. Probably more relevant is the data concerning the core prerogatives of regions, namely health for Italy and education for France. In the former case, specific variables are  $PHYS_{i,t}$ , the

number of private physicians per 1,000 inhabitants, capturing demand-induced effects and  $BED_{i,t}$ , the number of beds in public hospitals per 1,000 inhabitants capturing supply-induced effects. The first variable is undoubtedly relevant while the second one mostly and logically matters for investment expenditures. As to France, variable  $SCHOOL_{i,t}$  describing the number of pupils in public secondary schools is significant with the expected positive sign.

[Table 7 about here]

The final step of the analysis consists in introducing the fitted values  $\hat{T}_{i,t}$  and  $\hat{T}_{i,t-1}$  from equation (3) in the expenditure equation (4). The one-year lag between the funding (and expectations thereof) and the assignment and spending of these funds requires, as a conditioning test, that only the lagged fitted values be statistically significant. In both countries, this requirement is satisfied. For Italy, there is evidence of soft budget spending behavior in total and in investment spending, while in the French case current expenditures seem to be particularly affected by problems of soft budget constraint. Even in France central government politicians apply a significant dose of discretionary power in the distribution of grants that results in bailout interventions of various types and, consequently, in soft budget spending behaviors. In a way, one can push the explanation of these results to saying that political culture does seem to play a larger role in the French case, where it determines current expenditures that are the more expendable resource to purchase regional votes and support. In Italy bailout expectations are mainly concentrated in capital spending that, because of its smaller magnitude and less regular time dynamics, is less apt to purchase local political capital (Dixit and Londregan, 1996). Combining these results with the institutional differences in grant distribution between Italy and France, the greater role of expectations in current spending for France seems to compensate the greater rigidity that the principle of horizontal equality engenders for that country. The opposite seem to apply to Italy.

[Table 8 about here]

## *6. Conclusions and proposals for reform*

The estimation of the same nested model of financing and spending decisions, augmented for an autoregressive spending procedure to estimate the bailout expectations, has allowed detecting the presence of soft budget spending behaviors both in the French and Italian case. The fiscal rules or institutions that govern intergovernmental financial relations do never entirely determine the allocation of transfers from the central to the regional governments. Admittedly, an important difference between the two countries is that in France, the estimates confirm that the distribution of grants is much more “horizontal” than in the Italian case, as region specific proxies of bailout expectations show a much lower explanatory power for French data than for Italian ones. In both countries however, bailout expectations have an impact on regional spending decisions, which suggests that also the “political culture”, in the form of administrative mores and practices (Aghion and Tirole, 1997; Hillman and Swank, 2000), does play a role in explaining soft budget spending behaviors by regional governments. This role is not the same in both countries, as in Italy it appears stronger in the case of investment expenditures, while in France it is for current spending. This suggests a compensating role of administrative practices with respect to fiscal rules in both countries, that appears stronger in the domain of spending where institutions seem, in principle, more restrictive. These results call for more fine-grained research in the politics of the distribution of funds to regions and of the way these are spent.

Should this domain of fiscal policy become a target for reform, as the current financial crisis and pressures for spending reviews deem likely, the comparative analysis carried out in this paper points out a few possible changes that could produce savings for the public finances, but it also provides a rather pessimistic message. In the case of Italy, the “variable

geometry” setting of decentralization appears to be the weakest point in terms of control of discretionary behavior by politicians. In Italy, bailout expectations originate mostly from region specific dummies, whereas none of that is apparent in France. Thus, either the special statute regions are brought back under the same institutional framework as the ordinary statute one, or transfers from the central government must represent a much less important part of their revenue sources. Another possible reform regards the financing of capital spending, which, again in the Italian case is much less regulated than funding of current expenditures. While different regimes for the two types of expenditures appear legitimate on efficiency grounds, the greater role of bailout expectations in this domain suggest that, for the Italian case, the budget constraint is less binding there than in the case of current expenditures.

In the case of France reform proposals are less obvious. Savings can emerge from a different scheduling of regional elections, that appear to determine (contrary to the Italian case, where they coincide with the national ones in a larger number of cases) greater distortions in the size and composition of regional spending. France has also probably felt to a lesser extent the “external binding constraint” imposed by the Maastricht Treaty in the period under consideration. This may be either due to the more virtuous starting point of France’s public finances, or to the country’s greater political weight at the European Union level, or to both.

The pessimistic message is that bailout expectations and “political culture”, in the broad sense of administrative practices and political relations, seems to play a countervailing, and softening, effect on the impact of fiscal rules on transfers and spending decisions. Expecting that the same politicians who play this softening game autonomously decide to reverse these behaviors and tie their own hands further runs against everything that public choice has taught us so far.

## References

- Aghion, P. and Tirole, J. (1997), "Formal and Real Authority in Organizations" *Journal of Political Economy* 105: 1-29.
- Arachi G. and Zanardi A. (2004), "Designing Intergovernmental Fiscal Relations: Some Insights from the Recent Italian Reform", *Fiscal Studies* 25: 325–365.
- Arulampalam, W. Dasgupta, S., A. Dhillon and B. Dutta (2009), "Electoral Goals and Centre-State Transfers in India," *Journal of Development Economics* 88: 103-119.
- Bordignon, M. and Turati, G. (2009), "Bailing out Expectations and Health Expenditures" *Journal of Health Economics* 28: 305-321.
- Breuillé, M-L., Madiès, T. and Taugourdeau E. (2006), "Does Tax Competition Soften Regional Budget Constraints" *Economics Letters* 90: 230-236.
- Brosio, G. and Piperno, S. (2007), *Governo e Finanza Locale* III ed., Torino, Giappichelli.
- Dewatripont, M. and Maskin, E. (1995), "Credit and Efficiency in Centralized and Decentralized Economies" *Review of Economic Studies* 62: 541-555.
- Dixit, A. and Londregan, J. (1996), "The Determinants of Success of Special Interests in Redistributive Politics", *Journal of Politics* 58: 1132-1155.
- Garello, P. (2003) "The Dynamics of Fiscal Federalism", *Journal des Economistes et des Etudes Humaines* 13:421-440.
- Gilbert, G. and Rocaboy, Y. (1996), "Local Public Spending in France: The Case of Welfare Programs at the Département Level" in G. Pola, G. France and R. Levaggi (eds.) "Developments in Local Government Finance: Theory and Policy" London, Edward Elgar, 97-114.
- Goodspeed, T. (2002), "Bailouts in a Federation" *International Tax and Public Finance* 9: 409-421.

- Guengant, A. and Josselin, JM. (2005), "Grants to Local Governments under National Fiscal Discipline: The Case of France" *Urban Public Economics Review* 2: 69-88.
- Guengant, A. and Rocaboy, Y. (2008), "Reform in France", in B. Dollery and L. Robotti (eds.), *The Theory and Practice of Local Government Reform*, London: Edward Elgar, 133-147.
- Hillman, A. and Swank, O. (2000), "Why Political Culture should be in the Lexicon of Economics" *European Journal of Political Economy* 16: 1-4.
- Holtz-Eakin, D. and Rosen, H. (1993), "Municipal Construction Spending: An Empirical Examination," *Economics and Politics* 5: 61-84.
- Kornai, J. (1986), "The Soft Budget Constraint" *Kyklos* 39: 3-30.
- Kornai, J., Maskin, E., and Roland, G. (2003), "Understanding the Soft Budget Constraint" *Journal of Economic Literature* 151: 1095-1136.
- Oates, W. (2005), "Toward a Second Generation of Fiscal Federalism" *International Tax and Public Finance* 12: 349-337.
- Olson, M. Jr. (1982). *The Rise and Decline of Nations. Economic Growth, Stagflation, and Social Rigidities*. New Haven, Yale University Press.
- Padovano, F. (2007). *The Politics and Economics of Regional Transfers*, Cheltenham, Edward Elgar.
- Padovano, F. And Ricciuti, R. (2008) "Political Competition and Economic Performance: Evidence from Italian Regions", *Public Choice* 138: 263-277.
- Padovano, F. (2011). "Causes and Consequences of Bailing out Expectations of Subcentral Governments: Theory and Evidence from the Italian Regions". *CREM Working Paper n. 2011/28*.
- Padovano, F. (2012), "The Determinants of Transfers to Regions: Evidence from Italy", *European Journal of Political Economy*, forthcoming.

- Pettersson-Lidbom P., Dahlberg, M. (2003), "An Empirical Approach for Evaluating Soft Budget Constraints" *Working Paper no. 28, Department of Economics, Uppsala University*.
- Prud'homme, R. (1995), "The Dangers of Decentralization" *World Bank Research Observer* 10: 201-220.
- Putnam, R., with Leonardi, R. and Nanetti, R. (1993), *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton, Princeton University Press.
- Qian, Y. and Weingast, B. (1997), "Federalism as a Commitment to Preserving Market Incentives" *Journal of Economic Perspectives* 11: 83-92.
- Qian, Y. and Roland, G. (1998), "Federalism and the Soft Budget Constraint" *American Economic Review* 8: 1141-1162.
- Rattsø, J. (1999), "Aggregate Local Public Sector Investment and Shocks: Norway 1946-1999" *Applied Economics* 31: 577-584.
- Rodden, J. (2005), "Breaking the Golden Rule: Fiscal Behaviour with Rational Bailout Expectations in the German States" MIT, mimeo.
- Rodden, J., Eskeland, G. and Litvack, J. (2003), *Fiscal Decentralization and the Challenge of Hard Budget Constraints*, Cambridge, MIT Press.
- Rogoff, K. (1990). "Equilibrium political budget cycles". *American Economic Review*, 80: 21-36
- Turati G. (2003), "Modelli regionali di sanità", Roma, Ministero dell'Economia e delle Finanze, Commissione Tecnica per la Spesa Pubblica.
- Wildasin, D. E. (1997), "Externalities and Bailouts. Hard and Soft Budget Constraints in Intergovernmental Fiscal Relations," *Policy Research Working Paper no. 1843, World Bank*.



Table 1: The Italian and French public sectors in 2002

	Italy	France
Tiers of government	<ul style="list-style-type: none"> <li>- Central</li> <li>- Regional: 15 ordinary statute regions (<i>Regioni a Statuto Ordinario</i>, RSO), 5 special statute regions (<i>Regioni a Statuto Speciale</i>, RSS)</li> <li>- Local (109 provinces, and more than 8,100 municipalities)</li> </ul>	<ul style="list-style-type: none"> <li>- Central</li> <li>- Regional: 22 regions including Corsica and Île-de-France</li> <li>- Local (100 départements and more than 36,000 municipalities)</li> </ul>
Public expenditures in percentage of GDP	<ul style="list-style-type: none"> <li>- Total : 47.4%</li> <li>- Central : 27.4%</li> <li>- Local : 20,0%</li> <li>- Regions: 56%</li> <li>- Provinces: 5%</li> <li>- Municipalities 39%</li> </ul>	<ul style="list-style-type: none"> <li>-Total : 54%</li> <li>- Central : 43.3%</li> <li>- Local : 10.7%</li> <li>-Municipalities: 60%</li> <li>-Départements: 30%</li> <li>-Régions : 10%</li> </ul>
Number of Regions	20	22
Average population of the Regions (standard deviations)	2,923,118 (2,386,680)	2,659,927 (2,381,732)
Average Surface area of the Regions (km <sup>2</sup> ) (standard deviations)	15,066 (7,411)	24,725 (10,782)
Average Density of the Regions (km <sup>2</sup> /inhabitant) (standard deviations)	177 (108)	137,68 (201,78)
Main responsibilities of the Regions	<ul style="list-style-type: none"> <li>-Health care provision,</li> <li>-Spending programs related with education, transport, social assistance and culture.</li> </ul>	<ul style="list-style-type: none"> <li>- Education and culture (High school buildings and facilities)</li> <li>-Economic development (Vocational training)</li> <li>-Roads and large-scale infrastructure (Fishing ports, railways)</li> <li>- Social services, solidarity and housing (Participation in the financing of health facilities)</li> </ul>
Financing of Regional expenditures	<ul style="list-style-type: none"> <li>Taxes: 41%</li> <li>Transfers : 53%</li> <li>Other revenues: 6%</li> </ul>	<ul style="list-style-type: none"> <li>Taxes: 30%</li> <li>Transfers : 55%</li> <li>Other revenues: 15%</li> </ul>

Source: INSEE for France and ISTAT for Italy

Figure 1: Current transfers to regions Alsace, Limousin and Aquitaine

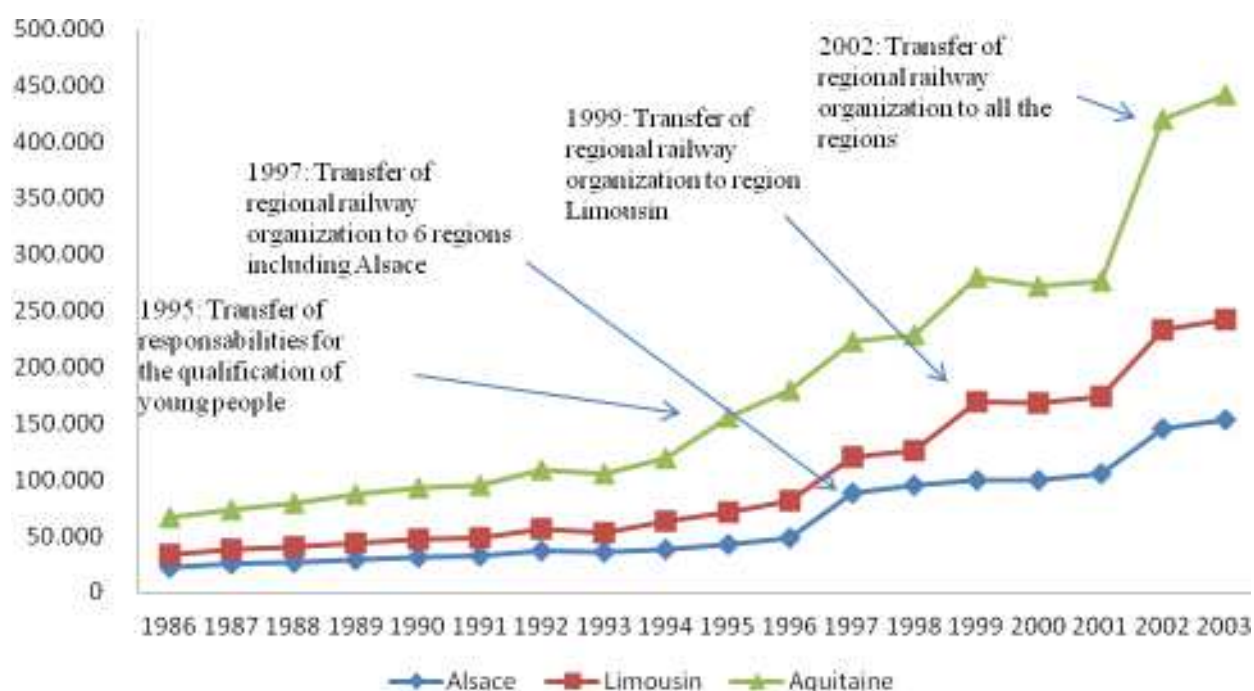


Table 2. Expenditures of Italian Regions by function in 2005 (percentage terms)

Function	All regions	RSSs	RSOs
General administration	5.7	11.3	3.7
Education	2.0	3.3	1.5
Job training	2.6	3.4	2.4
Assistance	2.5	2.2	2.6
Health Care	51.0	30.4	58.2
Agriculture	2.9	3.8	2.6
Industry	2.5	2.7	2.5
Tourism	0.7	0.9	0.6
Transportation	6.7	3.3	7.9
Culture	5.2	3.8	5.7
Housing	2.1	1.8	2.2
Other	16.0	33.2	10.1
Total	100.0	100.0	100.0

Source: ISSIRFA, Osservatorio Finanziario sulle Regioni.

Table 3. Socio-economic indicators for the Italian Regions, year 2002

Regions	Statute type	Area Km <sup>2</sup>	Population N	Population density (n/km <sup>2</sup> )	Population by age		GDP (million €)	GDP per capita (thousands €)	Incidence of poverty (%)	Employment rate (14-65, %)
					0-15 (%)	>65 (%)				
Piedmont	RSO	25.399	4330172	168	12,4	22,4	106200	24,9	7,1	64
Valle d'Aosta	RSS	3.263	122868	37	13,2	20,2	3374	27,6	6,8	66,3
Lombardy	RSO	23.861	9393092	388	13,6	19,4	255086	27,6	3,7	65,5
Trentino Alto Adige	RSS	13.607	974613	71	16,1	17,7	27284	28,3	5,1	67,1
Veneto	RSO	18.391	4699950	253	13,9	19,2	112520	24,2	4,5	64,6
Friuli Venezia Giulia	RSO	7.855	1204718	153	12	22,6	29683	24,8	7,2	63,1
Liguria	RSO	5.421	1592309	291	11,1	26,5	37855	24,0	5,2	61,1
Emilia Romagna	RSO	22.124	4151369	184	12,5	22,7	110659	27,1	2,5	68,4
Tuscany	RSO	22.997	3598269	155	12,1	23,2	84952	23,8	4,6	63,8
Umbria	RSO	8.456	858938	100	12,5	23,3	17458	20,6	7,3	61,6
Marche	RSO	9.694	1518780	155	13,1	22,6	32364	21,5	5,4	63,5
Lazio	RSO	17.207	5269972	303	13,9	19,1	130012	25,0	6,8	58,4
Abruzzo	RSO	10.798	1299272	119	13,4	21,3	23753	18,5	11,8	57,2
Molise	RSO	4.438	321953	72	13,4	22	5512	17,1	21,5	51,1
Campania	RSO	13.595	5788986	424	17,5	15,3	84597	14,7	27	44,1
Puglia	RSO	19.362	4068167	209	15,7	17,3	60057	14,9	19,4	44,4
Basilicata	RSO	9.992	596546	60	14,5	19,9	9261	15,5	24,5	49,3
Calabria	RSO	15.080	2009268	133	15,3	18,3	27752	13,8	23,3	44,6
Sicily	RSS	25.708	5013081	195	16,2	18	73475	14,7	30,8	44
Sardinia	RSS	24.090	1650052	68	12,9	17,6	27594	16,8	15,9	51,4
Italy		301.338	58462375	192	14,1	19,7	1259437	21,8	11,1	57,5



$$(1) \quad T_{i,t} = \alpha_1 POP_{i,t} + \alpha_2 U_{i,t} + \alpha_3 \Delta GDP_{i,t} + \sum_{i=1}^I q_i + \varepsilon_{i,t}$$

Table 4 Estimates of equation 1 for Italy. Transfers as a function of structural determinants

Italy	Model 1	Model 2	Model 3
Dependent variable	Total transfers $TT_{i,t}$	Current expenditure transfers $CT_{i,t}$	Investment expenditure transfers $IT_{i,t}$
$C$	0.0003*** (7.97)	0.0001*** (4.31)	0.0001*** (9.6)
$POP_{i,t}$	-1.88 <sup>-11</sup> *** (-2.43)	7.54 <sup>-13</sup> *** (0.1)	-1.31 <sup>-11</sup> (-4.23)
$U_{i,t}$	0.001 (1.52)	0.0005 (0.6)	0.0002 (1.05)
$U_{i,t-1}$	0.002*** (2.76)	0.002*** (2.53)	0.0002 (-1.1)
$\Delta GDP_{i,t}$	-0.001 (-1.22)	0.0005 (0.77)	-0.0004** (-2.02)
$\Delta GDP_{i,t-1}$	-0.001** (-2.21)	-0.001* (-1.61)	-0.0004** (-1.37)
$\Delta GDP_{i,t-2}$	-0.0004 (-0.51)	-0.0004 (-0.62)	-0.0003** (-1.46)
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. $R^2$	0.54	0.45	0.49
S.E.R.	0.0002	0.0002	8.68 <sup>-05</sup>
F statistics	32.42***	22.82***	26.53***
D.W.	1.97	1.99	2.16
Sample period / number of observations	1998-2007 / 210	1998-2007 / 210	1998-2007 / 210

Note: t-statistics in parentheses. Statistical significance at the 1%, 5% and 10% level are depicted by \*\*\*, \*\* and \* respectively.

Table 4 (continued). Estimates of equation 1 for France. Transfers as a function of structural determinants

France	Model 4	Model 5	Model 6
Dependent variable	Total transfers $TT_{i,t}$	Current expenditure transfers $CT_{i,t}$	Investment expenditure transfers $IT_{i,t}$
$C$	-2.194*** (-5.20)	-1.953*** (-3.55)	-0.008 (-0.73)
$FOP_{i,t}$	7.70 <sup>-7</sup> *** (-5.20)	5.66 <sup>-7</sup> *** (2.83)	9.20 <sup>-9</sup> *** (2.57)
$U_{i,t}$	0.006*** (10.99)	0.006*** (9.92)	3.36 <sup>-5</sup> (0.17)
$U_{i,t-1}$	0.005*** (6.91)	0.005*** (6.81)	0.00035* (1.69)
$\Delta GDP_{i,t}$	-0.000915*** (-4.05)	-0.0014*** (-18.86)	0.000517** (2.07)
$\Delta GDP_{i,t-1}$	0.000452*** (3.53)	-8.07 <sup>-5</sup> *** (-2.39)	0.000251** (1.83)
$\Delta GDP_{i,t-2}$	-0.000874*** (-7.82)		
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. $R^2$	0.96	0.99	0.74
S.E.R.	0.01881	0.01616	0.00638
F statistics	235.15***	1139.92***	26.62***
D.W.	2.85	2.99	2.02
Sample period / number of observations	1995-2005 / 242	1995-2005 / 242	1995-2005 / 242

Note: t-statistics in parentheses. Statistical significance at the 1%, 5% and 10% level are depicted by \*\*\*, \*\* and \* respectively.

(2)

$$T_{i,t} = \alpha_1 POP_{i,t} + \alpha_2 U_{i,t} + \alpha_3 \Delta GDP_{i,t} + \alpha_4 NDEF_t + \alpha_5 TREND_t + \alpha_6 NHIND_t + \alpha_7 NPBC_t + \alpha_8 NMARGIN_t + \sum_{i=1}^I \varrho_i + \varepsilon_{2,it}$$

Table 5 Estimates of equation 2 for Italy. Transfers as a function of structural determinants and of time proxies for bailout expectations

Italy	Model 7	Model 8	Model 9
Dependent variable	Total transfers $TT_{i,t}$	Current expenditure transfers $CT_{i,t}$	Investment expenditure transfers $IT_{i,t}$
$C$	0.003*** (4.36)	0.002*** (3.94)	-0.0004*** (-5.28)
$POP_{i,t}$	-6.68 <sup>-10</sup> *** (-2.68)	-5.53 <sup>-10</sup> *** (-2.42)	-1.27 <sup>-10</sup> *** (-4.46)
$U_{i,t-1}$	0.001 (1.01)	0.002* (1.66)	-2.39 <sup>-05</sup> (-0.13)
$TREND_t$	7.72 <sup>-05</sup> *** (2.99)	5.8 <sup>-05</sup> *** (2.26)	7.24 <sup>-07</sup> (0.14)
$NDEF_t$	-4.9 <sup>-05</sup> (-0.75)	-5.6 <sup>-06</sup> (-0.09)	-6.53 <sup>-05</sup> *** (-6.86)
$NDEF_{t-1}$	7.3* (1.73)	5.71 <sup>-05</sup> (-1.29)	6.25 <sup>-06</sup> (-0.65)
$NHIND_t$	-0.0004*** (-2.65)	-0.0005*** (3.43)	0.0001*** (5.47)
$NPBC_t$	0.000246*** (3.39)	0.00014*** (2.19)	7.64 <sup>-05</sup> *** (5.77)
$NPBC_{t+1}$	-5.68 <sup>-05</sup> (-0.63)	-9.88 <sup>-05</sup> (-1.13)	7.88 <sup>-05</sup> *** (5.7)
$NMARGIN_t$	-0.027*** (-3.31)	-0.024*** (-2.8)	0.0038*** (2.61)
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. R <sup>2</sup>	0.63	0.58	0.78
S.E.R.	0.0002	0.00023	6.83 <sup>-05</sup>
F statistics	11.86***	9.8***	23.23***
D.W.	1.98	1.98	2.04
Sample period / number of observations	1998-2006 / 189	1998-2006 / 189	1998-2006 / 189

Note: t-statistics in parentheses. Statistical significance at the 1%, 5% and 10% level are depicted by \*\*\*, \*\* and \* respectively.

Table 5 (continued). Estimates of equation 2 for France. Transfers as a function of structural determinants and of time proxies for bailout expectations

France	Model 10	Model 11	Model 12
Dependent variable	Total transfers $TT_{i,t}$	Current expenditure transfers $CT_{i,t}$	Investment expenditure transfers $IT_{i,t}$
$C$	-0.385*** (-10.5)	-0.337*** (-10.29)	-0.016 (-0.66)
$POP_{i,t}$	-1.02 <sup>-09</sup> (-0.07)	-2.47 <sup>-08**</sup> (-1.95)	1.41 <sup>-08</sup> (1.50)
$U_{i,t}$			
$U_{i,t-1}$	0.006*** (4.81)	0.004*** (4.33)	0.0003 (0.86)
$\Delta GDP_{i,t}$	0.009*** (5.41)	0.008 (6.85)	0.001* (1.61)
$TREND_t$	0.023*** (35.78)	0.023*** (28.9)	0.0004* (1.73)
$NDEF_t$	-0.005*** (-27.41)	-0.005 (-25.73)	-0.0001* (-1.75)
$NDEF_{t-1}$	0.219*** (33.23)	0.226*** (28.96)	-0.0009 (-0.66)
$NHIND_t$	-0.228*** (-8.73)	-0.216*** (-8.56)	-0.014* (-1.86)
$NPBC_t$	0.097*** (34.56)	0.099*** (30.87)	0.0009** (1.95)
$NPBC_{t+1}$	-3.067*** (-33.04)	-3.171*** (-28.85)	0.01 (.054)
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. $R^2$	0.99	0.99	0.78
S.E.R.	0.011	0.0078	0.006
F statistics	597.56***	1338.78***	23.47***
D.W.	1.64	1.44	2.09
Sample period / number of observations	1998-2006 / 220	1998-2006 / 220	1998-2006 / 220



$$(3) T_{it} = \alpha_1 POP_{i,t} + \alpha_2 U_{i,t} + \alpha_3 \Delta GDP_{i,t} + \alpha_4 NDEF_t + \alpha_5 TREND_t + \alpha_6 NHIND_t + \alpha_7 NPBC_t + \alpha_8 NMARGIN_t \\ + \alpha_9 RPBC_{i,t} + \alpha_{10} ALIGN_{i,t} + \alpha_{11} RMARGE_{i,t} + \alpha_{12} GOVYEARS_{i,t} + \sum_{i=1}^I \alpha_i + \varepsilon_{i,t}$$

Table 6. Estimates of equation 3 for Italy. Transfers as a function of structural determinants and of time and region specific proxies for bailout expectations

Italy	Model 13	Model 14	Model 15
Dependent variable	Total transfers $TT_{i,t}$	Current expenditure transfers $CT_{i,t}$	Investment expenditure transfers $IT_{i,t}$
<i>C</i>	0.002*** (2.82)	0.0017*** (2.36)	0.0004*** (4.76)
$POP_{i,t}$	-5.56-10* (-1.86)	-4.05-10 (-1.49)	-1.41-10*** (-4.77)
$U_{i,t-1}$	0.001 (1.16)	0.002* (1.66)	-6.47-05 (-0.36)
$NDEF_t$	4.16-05 (-0.6)	6.49-06 (0.1)	-7.11-05*** (-6.39)
$NDEF_{t-1}$	7.76-05** (1.89)	6.49-05 (1.52)	-5.32-06 (-0.58)
$TREND_t$	4.73-05 (1.57)	3.5-05 (1.24)	2.2-07 (0.03)
$NHIND_t$	-0.0003** (-1.77)	-0.0004*** (-2.67)	0.0002*** (4.35)
$NPBC_t$	0.0003*** (3.35)	0.00015*** (2.15)	8.77-05*** (5.58)
$NPBC_{t+1}$	3.7-05 (0.63)	-1.98-05 (-0.18)	7.74-05*** (2.83)
$NMARGIN_t$	-0.02** (-2.3)	-0.019*** (-2.27)	0.004** (1.94)
$RPBC_{i,t}$	7.4-05 (1.11)	6.56-05 (1.09)	2.06-05 (0.9)
$ALIGN_{i,t}$	5.18-07 (0.02)	1.86-05 (0.76)	-2.11-06 (-0.44)
$RMARGIN_{i,t}$	0.0003** (1.83)	0.0003** (1.77)	-4.08-05 (-1.57)
$GOVYEARS_{i,t}$	4.54-05** (2.3)	4.53-05*** (2.67)	3.61-05 (0.53)
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. $R^2$	0.63	0.57	0.78
S.E.R.	0.0002	0.0002	6.78-05
F statistics	10.39***	8.35***	20.05***
D.W.	2.03	2.03	2.03
Sample period / number of observations	1998-2006 / 189	1998-2006 / 189	1998-2006 / 189

Table 6 (continued). Estimates of equation 3 for France. Transfers as a function of structural determinants and of time and region specific proxies for bailout expectations

France	Model 16	Model 17	Model 18	Model 19
Dependent variable	Total transfers $TT_{it}$	Current expenditure transfers $CT_{it}$	Investment expenditure transfers $IT_{it}$	Total transfers $TT_{it}$
$C$	-0.134*** (-3.14)	-0.108 (-3.55)	0.001 (0.155)	-0.46*** (-8.76)
$POP_{i,t}$	-3.54 <sup>-09</sup> (-0.27)	-2.02 <sup>-08**</sup> (-2.07)	4.82 <sup>-09*</sup> (1.61)	-5.61 <sup>-08***</sup> (-3.43)
$U_{i,t}$				
$U_{i,t-1}$	0.004*** (3.51)	0.003*** (5.56)	0.0004*** 2.59	0.007*** (3.96)
$\Delta GDP_{i,t}$	0.01*** (6.35)	0.01*** (7.17)	0.0007*** (2.67)	0.111 (3.03)
$NDEF_t$	-0.002*** (-13.12)	-0.002*** (-15.19)	-0.0002*** (-4.5)	-0.006*** (14.76)
$NDEF_{t-1}$	0.009 (1.21)	0.012** (2.03)	-0.0001*** (-2.5)	0.372*** (18.97)
$TREND_t$	0.028*** (21.91)	0.026*** (25.06)	0.001*** (2.55)	
$NHIND_t$	-0.32*** (-11.44)	-0.27*** (-10.8)	-0.022*** (-2.55)	-0.308*** (-10.31)
$NPBC_t$	0.027*** (9.53)	0.027*** (12.63)	0.0016*** (2.36)	0.093*** (14.58)
$NPBC_{t+1}$	-0.176* (1.69)	-0.21*** (-2.54)	-0.0008 (-1.16)	-5.14*** (-18.72)
$NMARGIN_t$				
$RPBC_{i,t}$	0.018*** (12.81)	0.018*** (16.29)	0.0004 (0.86)	-0.034*** (-23.39)
$ALIGN_{i,t}$	-0.001 (-1.26)	-0.002* (-1.6)	-0.0001 (-0.3)	
$RMARGIN_{i,t}$	0.017** (1.98)	-0.025 (4.91)	-0.004** (-1.77)	1.95 <sup>-05</sup> (0.163)
$GOVYEARS_{i,t}$				-0.0003 (-1.31)
$RAIL_{i,t}$				0.017** (5.26)
Regional fixed effects	Yes	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS	EGLS
Adj. R <sup>2</sup>	0.99	0.99	0.75	0.98
S.E.R.	0.01	0.007	0.007	0.013
F statistics	611.07***	1622.7***	21.23***	272.57***
D.W.	1.74	1.47	1.67	1.32
Sample period / number of observations	1998-2006 / 220	1998-2006 / 220	1998-2006 / 220	1998-2006 / 220

$$(4) \ E_{i,t} = \alpha_1 RGDP_{i,t} + \alpha_2 YPOP_{i,t} + \alpha_3 EPOP_{i,t} + \alpha_4 RIGHT_{i,t} + \alpha_5 SPEC_{i,t} + \sum_{i=1}^I \vartheta_i + \varepsilon_{4,it}$$

Table 7. Estimates of equation 4 for Italy. Expenditures as a function structural determinants

Italy	Model 20	Model 21	Model 22
Dependent variable	Total expenditures $E_{i,t}$	Total current expenditures $CE_{i,t}$	Total investment expenditures $IE_{i,t}$
$C$	-0.008*** (-4.9)	-0.005*** (-3.41)	-0.0001*** (-3.1)
$RGDP_{i,t}$	0.045** (1.95)	0.074*** (3.55)	0.001 (0.17)
$YPOP_{i,t}$			
$EPOP_{i,t}$	0.037*** (3.94)	0.0218*** (2.85)	0.007*** (3.02)
$RIGHT_{i,t}$	-2.99 <sup>-05</sup> (-0.52)	-8.16 <sup>-05</sup> (-1.49)	-2.17 <sup>-05</sup> (-1.47)
$SPEC_{i,t} = BUR_{i,t}$	13.76* (1.64)	10.811 (1.33)	1.804 (0.87)
$SPEC_{i,t} = PHYS_{i,t}$	1.05*** (3.64)	0.683*** (2.46)	0.1588** (1.84)
$SPEC_{i,t} = BED_{i,t-1}$	3.7 <sup>-08</sup> * (1.87)	2.43 <sup>-08</sup> (1.37)	9.95 <sup>-09</sup> ** (2.17)
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. $R^2$	0.94	0.93	0.83
S.E.R.	0.0007	0.0006	0.0002
F statistics	136.15***	122.5***	43.01***
D.W.	1.76	1.72	1.87
Sample period / number of observations	1997-2007 / 231	1997-2007 / 231	1997-2007 / 231

Table 7 (continued). Estimates of equation 4 for France. Expenditures as a function structural determinants

France	Model 23	Model 24	Model 25
Dependent variable	Total expenditures $E_{i,t}$	Total current expenditures $CE_{i,t}$	Total investment expenditures $IE_{i,t}$
$C$	-0.165 (-0.79)	-0.277*** (-2.39)	0.066 (0.51)
$RGDP_{i,t}$	14.21*** (5.54)	11.41*** (5.64)	0.32 (0.11)
$YPOP_{i,t}$	0.008*** (6.61)	0.006*** (6.19)	0.002*** (2.76)
$EPOP_{i,t}$	0.002 (0.19)	0.008 (1.12)	-0.0007 (-0.1)
$RIGHT_{i,t}$	0.016 (0.47)	-0.025* (-1.6)	0.032 (1.19)
$SPEC_{i,t} = SCHOOL_{i,t}$		8.74 <sup>05</sup> *** (2.75)	
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. $R^2$	0.94	0.96	0.62
S.E.R.	0.029	0.021	0.032
F statistics	124.74***	183.30***	14.78***
D.W.	2.09	2.08	2.15
Sample period / number of observations	1997-2007 / 200	1997-2007 / 220	1997-2007 / 220

$$(5) E_{it} = \alpha_1 RGDP_{it} + \alpha_2 YPOP_{it} + \alpha_3 EPOP_{it} + \alpha_4 RIGHT_{it} + \alpha_5 SPEC_{it} + \alpha_6 \hat{T}_{it} + \sum_{i=1}^I \varrho_i + \varepsilon_{5it}$$

Table 8. Estimates of equation 5 for Italy. Expenditures as a function structural determinants and bailing out expectations

Italy	Model 26	Model 27	Model 28
Dependent variable	Total expenditures $E_{i,t}$	Total current expenditures $CE_{i,t}$	Total investment expenditures $IE_{i,t}$
$C$	-0.006*** (-3.14)	-0.004*** (-2.38)	-0.0005 (-0.87)
$RGDP_{i,t}$	-0.013 (-0.34)	0.071*** (2.22)	-0.031*** (-2.49)
$YPOP_{i,t}$			
$EPOP_{i,t}$	0.041*** (3.35)	0.019** (2.05)	0.01*** (3.01)
$RIGHT_{i,t}$	3.31 <sup>-05</sup> (0.56)	-4.20 <sup>-05</sup> (-0.8)	-7.85 <sup>-06</sup> (-0.32)
$SPEC_{i,t} = BUR_{i,t}$	-0.465 (-0.06)	3.333 (0.5)	-3.378 (-0.83)
$SPEC_{i,t} = PHYS_{i,t}$	0.884*** (2.4)	0.411 (1.4)	0.165 (0.87)
$SPEC_{i,t} = BED_{i,t-1}$	4.14 <sup>-08**</sup> (1.84)	3.38 <sup>-08*</sup> (1.62)	-9.89 <sup>-09</sup> (-1.2)
$\hat{T}_{it}$	0.052 (0.73)	-0.036 (-0.65)	0.033 (1.09)
$\hat{T}_{it-1}$	0.125** (1.87)	0.064 (1.07)	0.044** (1.72)
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. $R^2$	0.97	0.98	0.96
S.E.R.	0.0006	0.0003	0.0002
F statistics	218.06***	238.67***	112.38***
D.W.	2.17	2.16	2.02
Sample period / number of observations	2000-2007 / 181	2000-2007 / 181	2000-2007 / 181

Table 8 (continued). Estimates of equation 5 for France. Expenditures as a function structural determinants and bailing out expectations

France	Model 29	Model 30	Model 31
Dependent variable	Total expenditures $E_{i,t}$	Total current expenditures $CE_{i,t}$	Total investment expenditures $IE_{i,t}$
$C$	-0.477** (-2.05)	-0.41*** (-3.66)	0.006 (0.033)
$RGDP_{i,t}$	15.99*** (3.46)	14.33*** (7.33)	2.297 (0.48)
$YPOPI_{i,t}$	0.009*** (7.47)	0.006** (7.15)	0.002** (1.99)
$EPOPI_{i,t}$	0.021** (1.74)	0.015*** (2.45)	0.002 (0.21)
$RIGHT_{i,t}$	-0.0266 (-0.74)	-0.029* (-1.69)	2.44 <sup>-13</sup> *** (5.23)
$\hat{T}_{i,t-1}$	-1.62 <sup>-13</sup> (-0.72)	2.31 <sup>-13</sup> *** (2.22)	2.44 <sup>-13</sup> *** (5.23)
Regional fixed effects	Yes	Yes	Yes
Estimator	EGLS	EGLS	EGLS
Adj. $R^2$	0.92	0.95	0.6
S.E.R.	0.032	0.024	0.035
F statistics	72.46***	110.46***	10.69***
D.W.	2.03	1.95	2.13
Sample period / Number of observations	1997-2007 / 220	1997-2007 / 220	1997-2007 / 220

Appendix A. List of variables and sources (alphabetical order)

<i>Variable code</i>	<i>Explanation</i>
<i>ALIGN</i>	Dummy: national and regional governments are supported by the same majority
<i>BED</i>	Number of beds in public hospitals per 1,000 inhabitants
<i>CE</i>	Current real per capita expenditures
<i>CT</i>	Real per capita transfers for current expenditures
<i>ΔGDP</i>	Difference between the GDP growth rate of region <i>i</i> and the national average
<i>E</i>	Total real per capita expenditures
<i>EPOP</i>	Percentage of elderly population
<i>GOVEARS</i>	Number of years in office at time <i>t</i> of the President of the regional government
<i>IE</i>	Investment per capita real expenditures
<i>IT</i>	Real per capita transfers for capital expenditures
<i>BUR</i>	Number of top bureaucrats in regional public administration
<i>NDEF</i>	Ratio between the country's deficit to GDP ratio over the EU15 average deficit to GDP ratio
<i>NHIND</i>	Herfindahl index of fragmentation of the national government parliamentary majority
<i>NMARGIN</i>	Difference in the number of seats between the first and second largest party in the national parliament
<i>NPBC</i>	National electoral year
<i>POP</i>	Total regional population
<i>PHYS</i>	Private physicians per 1,000 inhabitants
<i>RAIL</i>	Multilevel dummy for central government transfers to regions for railway expenditures
<i>RGDP</i>	Regional real per capita income
<i>RIGHT</i>	Dummy for right wing regional government
<i>RMARGIN</i>	Difference in the number of seats between the first and second largest party in the regional parliament
<i>RPBC</i>	Regional electoral year
<i>SPEC</i>	Country-specific determinants of expenditures ( <i>BED</i> , <i>SCHOOL</i> , <i>BUR</i> ,
<i>SCHOOL</i>	Number of students in public high school
$\hat{T}_t$	Expected transfers
<i>TT</i>	Total real per capita transfers
<i>TREND</i>	Annual linear trend
<i>U</i>	Regional unemployment rate
<i>YPOP</i>	Percentage of young population

## Appendix B. Regional Codes

France			Italy		
N.	Code	Name	N.	Code	Name
1	AL	Alsace	1	ABR	Abruzzo
2	AQ	Aquitaine	2	BAS	Basilicata
3	AU	Auvergne	3	CAL	Calabria
4	BN	Basse Normandie	4	CAM	Campania
5	BO	Bourgogne	5	ERO	Emilia-Romagna
6	BR	Bretagne	6	FVG	Friuli-Venezia Giulia
7	CE	Centre	7	LAZ	Lazio
8	CA	Champagne-Ardenne	8	LIG	Liguria
9	CO	Corse	9	LOM	Lombardia
10	FC	Franche-Comté	10	MAR	Marche
11	HN	Haute-Normandie	11	MOL	Molise
12	IF	Ile de France	12	PIE	Piemonte
13	LR	Languedoc-Roussillon	13	PUG	Puglia
14	LI	Limousin	14	SAR	Sardegna
15	LO	Lorraine	15	SIC	Sicilia
16	MP	Midi-Pyrénées	16	TAA	Trentino-Alto Adige
17	PC	Poitou-Charentes	17	BO	Provincia autonoma di Bolzano
18	PL	Pays de la Loire	18	TN	Provincia autonoma di Trento
19	PI	Picardie	19	TOS	Toscana
20	NP	Nord-Pas-de-Calais	20	UMB	Umbria
21	PA	Provence-Alpes-Côte d’Azur	21	VDA	Valle d’Aosta
22	RA	Rhône-Alpes	22	VEN	Veneto